

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ALABAMA
SOUTHERN DIVISION

JOE J. HUDGENS and PHYLLIS }
HUDGENS, }
Plaintiffs, }
v. }
BELL HELICOPTER TEXTRON, }
INC., and DYNCORP, INC., }
Defendants. }

CASE NO. CV 99-B-2042-S

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U.S. DISTRICT COURT
N.D. OF ALABAMA

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MEMORANDUM OPINION

Currently before the court is the Motion for Summary Judgment filed by defendant DynCorp, Inc. ("DynCorp" or "defendant"). The present action arises out of claims by Joe J. Hudgens ("plaintiff" or "Hudgens"), a civilian employee of the United States Army, who was injured in a crash of a Bell UH-1H helicopter in Shelby County, Alabama, on May 1, 1999, when its vertical fin separated from the helicopter, causing it to crash. Plaintiff's wife, Phyllis Hudgens, ("Hudgens's wife") claims damages for loss of consortium.

Plaintiffs assert that (1) DynCorp was negligent in failing to properly maintain the aircraft or to make necessary repairs on the aircraft, (Compl. at ¶ 6); (2) that DynCorp was guilty of wantonness in that they purposely failed to correct a dangerous condition on the aircraft, (Compl. at ¶ 7); (3) that DynCorp is guilty of violating the Alabama Extended Manufacturers Liability Doctrine ("AEMLD"), (Compl. at ¶ 9); (4) negligent failure to warn, (Compl. at ¶ 10); (5) breach of warranty, (Compl. at ¶ 12); and (6) loss of consortium, (Compl. at ¶ 13). Plaintiffs have conceded that DynCorp is entitled to summary judgment on the counts for AEMLD and breach of warranty. (Pl.'s Brief at 1.)

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DynCorp asserts that it is entitled to summary judgment on all claims under the government contractor defense. (DynCorp's Brief in Support of Motion for Summary Judgment ("Def.'s S.J. Brief") at 6.) Upon consideration of the record, the submissions of the parties, the argument of counsel, and the relevant law, the court is of the opinion that DynCorp's Motion is due to be granted.

I. Factual Summary

The helicopter involved in the accident that made the basis of this suit ("accident helicopter") was manufactured by Bell Helicopter Textron, Inc. ("Bell") and delivered to the Army as a UH-1H¹ on October 5, 1972. Bell originally installed the tailboom, of which the vertical fin and spar involved in the accident ("accident vertical fin and spar") were integral parts, on a different helicopter also manufactured in 1972. (BX N at 46- 49.)²

On May 1, 1999, plaintiff was piloting a United States Army UH-1H helicopter bearing serial number 71-20228 on a Medivac mission. (Compl. at ¶ 2.) While flying the vertical tail fin separated from the aircraft, causing the aircraft to crash. (*Id.*) After the crash, it was discovered that the separation of the vertical tail fin was caused by the failure of the forward vertical fin spar. (DX B at 2-3; DX C at 2-3.)³ Representatives of the Analytical Investigation Branch of

¹ The Army assigned the accident helicopter to a medical evacuation unit and redesignated it as a UH-1V in October 1980. It will be referred to as a UH-1H throughout this Memorandum Opinion.

² Bell filed a Designation of Evidentiary Materials in Support of Motion for Summary Judgment by Bell Helicopter Textron, Inc., with attached exhibits. All references to the submitted evidence will be referred to as "BX" followed by the corresponding exhibit letter.

³ DynCorp filed a Designation of Evidentiary Material in Support of Motion for Summary Judgment by DynCorp, Inc. References to this evidence will be cited as "DX" followed by the corresponding tab letter. DynCorp filed Supplement to DynCorp's Designation

the Army at Corpus Christi Army Depot (“CCAD”) concluded that the vertical fin separation resulted from a fatigue crack originating in the outer edge of the No. 2 rivet hole in the forward spar of the vertical fin. (DX B at 2-3.) CCAD noted that the “fracture surfaces were old and well rubbed, preventing adequate examination.” (DX B at 3.) CCAD noted that patches and repairs had been made to the vertical fin indicating previous damage and repair. (DX C at 3.) Although the CCAD Report stated that there was “no sign of terminal failure of the patches,” the patches “may have permitted transfer of additional stress to the failed area, hastening its demise.” (DX C at 3.) Further examination of the tailboom surfaces revealed no other mechanical or material defects. (*Id.*)

A. History of Suggested Inspection and Maintenance of the UH-1 Vertical Fin Spar

Shortly after introducing the UH-1 to the military, Bell introduced civilian counterparts known as the 205 and 205A-1. The vertical fin spars on the UH-1s and their civilian counterparts are similar. Beginning in the mid-seventies and continuing through the date of the subject accident, Bell and the Federal Aviation Administration (“FAA”) issued a number of airworthiness directives, service bulletins and other reports identifying problems with fatigue cracks in the vertical fin spars on Bell helicopters. For example, in February 1987 Bell issued Report No. 205-939-009 entitled “Failure Modes & Effects Analysis UH-1H Tailboom.” (See DX I at BE 004201.)

In 1997, Bell generated a study entitled “205/UH-1 Fin Spar Failures.” (See DX J at BE 018866.) The study noted that there have been “6 accidents involving the left hand vertical fin

of Evidentiary Materials in Support of Motion for Summary Judgment. References to this evidence will referred to as “DX II” followed by the corresponding tab letter.

laminated spar used on 205A-1/UH-1 in RHL [“repeated heavy lift”] operations” (DX J at BE 018870.) “The FAA has formally requested that Bell provide a field repair to replace the laminated spar ass[embl]y[] because of: lack of inspectability and the increased fatigue environment in RHL operations.” (*Id.*) “Visual inspection cannot find cracks in sub-laminates . . . and at the top of the tailboom, spar web and cap cracks are covered by a lateral shear strap.” (*Id.* at BE 018871.) “Dye penetrant and ultrasound [inspection] techniques are not considered adequate” (*Id.*) “Corrosion occurs greatly reducing the fatigue strength.” (*Id.*)

On September 17, 1997, the FAA issued an Airworthiness Directive (“AD”) that provides in pertinent part:

As a result of [] accident investigations, the FAA has determined that a large number of high-power events can cause **fatigue cracks** which will cause the vertical fin spar to fail. This condition, if not corrected, could result in in-flight failure of the vertical fin spar and subsequent loss of control of the helicopter.

Since an unsafe condition has been identified that is likely to exist or develop on other Bell-manufactured Model HH-1K, TH-1F, TH-1L, UH-1A, UH-1B, UH-1E, UH-1F, **UH-1H**, UH-1L, UH-1P, SW204, SW204HP, and SW205 helicopters of the same type design, this priority letter AD requires, within 8 hours time-in-service (TIS) after the effective date of this AD, modification and inspection of the vertical fin spar. . . . **If any crack is discovered, replacement of the vertical fin spar with an airworthy vertical fin spar is required before further flight.**

(DX K at Pltf. 000003 (emphasis added).) The AD required removing eight rivets at the junction of the vertical fin spar and the tail boom, trimming the side-skin of the vertical fin spar, de-burring the rivet holes, and re-installing the side-skin. (*Id.* at Pltf. 000003-000004.)

The AD also specified new inspection protocol after completing the modifications:

* * * *

(3) Through the lower aft tailboom inspection door, using a bright

light and an inspection mirror, inspect the vertical fin spar assembly adjacent to the tailboom top skin

(4) In a ventilated work area, clean all surfaces to be inspected with a cloth dampened with aliphatic naphtha or an equivalent cleaning solvent. Using a bright light and a 10x magnifying glass, inspect the vertical fin spar assembly

(5) If any crack is discovered on the vertical fin spar, replace the vertical fin spar assembly . . . before further flight.

(*Id.* at Pltf. 000004.)

On April 6, 1998, Bell issued a Military Alert Bulletin (“MAB”) concerning the inspection of tail boom fin spar part numbers 205-030-846-(all dash numbers) on UH-1Hs. (DX L at BEK000124.) The MAB stated that “[c]racks have been found on the tail boom vertical fin spar. The fatigue cracks originated from the rivet holes in the area of fin station 60 to 75. Loose rivets, debond of the doublers and corrosion contributed to cracking of the spar.” (*Id.*) The MAB recommended an enhanced visual inspection, like the one recommended in the AD, a tap hammer inspection, and a fluorescent penetrant inspection. (*Id.* at BEK 000125-000128.)

B. The Army Inspection and Maintenance Procedures Prior to the Subject Accident

The Army inspects and maintains aircraft at three levels: the unit level, the intermediate level, and the depot level. (DX H ¶ 2.) The technical manuals that set forth the Army’s specifications for inspection and maintenance of its UH-1 helicopters are the “UH-1H/V and EH-1H/X Aircraft Phased Maintenance Checklist-TM 55-1520-210-PM,” (“Phased Maintenance Checklist”); “Preventive Maintenance Daily-TM-1-1520-210-PMD,” (“Daily Inspection Checklist”); and “Aviation Unit and Intermediate Maintenance Instructions - Army Model UH-1H/V/EH-1H/X-TM55-1520-210-23-1,” (“Maintenance Instructions”). (*Id.* ¶ 3.) AMCOM is the Army unit that promulgates and approves technical manuals for the inspection and

maintenance of UH-1s. (DX G ¶ 8.)

The Phased Maintenance Checklist requires the performance of over 150 individual inspections covering twenty-two areas of the helicopter, including the aircraft exterior, the tailboom interior, the tail rotor and gearbox area. (DX H, Ex. 1 at 1-5, 2-3 through 2-61.) For example, it requires inspection of the “[t]ailboom structure, including longerons for corrosion, cracks and damage. (Access panels 16, 17, 18 and 36, Fig. 1-4).” (*Id.*, Ex. 1 at 2-46.1.) It also requires inspection of the “[v]ertical fin rib . . . along rivet row at fin station 10.08 for cracks (access thru topmost lightning holes). (Access panel 14, Fig. 1-4).” (*Id.*, Ex. 1 at 2-51.)

The Daily Inspection Checklist⁴ requires the performance of over 130 individual inspections, (DX H, Ex. 2 at 7-27), covering eight general areas of the helicopter, (*Id.*, Ex. 2 at 5-6), that must occur “following the last flight of the day or prior to the first flight on the next day on which the aircraft is flown,” (*Id.*, Ex. 2 at 7). Inspection of the tail boom area including “[a]ll surfaces, components and equipment located in or on the tail boom and vertical fin,” including “access compartments below engine work deck and aft of cabin walls” is required. (*Id.*, Ex. 2 at 5.) Sequence number 4.8 contains the following directive: “Inspect tailboom, synchronized elevator and vertical fin exterior skin for evidence of damage, cracks, loose or missing rivets, and corrosion.” (*Id.*, Ex. 2 at 11.) Sequence number 4.10⁵ contains the following directive:

⁴ “The inspection consists of visual examination and operational checks to determine that the aircraft can safely and efficiently perform its assigned mission.” (DX H, Ex. 2 at 7.)

⁵ Sequence number 4.10 is a “mandatory safety of flight inspection item.” (DX H, Ex. 2 at 11.) “Certain inspections are mandatory safety-of-flight requirements, and the inspection intervals cannot be exceeded. In the event these inspections cannot be accomplished at the specified interval, the aircraft condition status symbol will be immediately changed to a red X.” (*Id.*, Ex. 2 at 1.)

Inspect vertical fin spar and vertical fin driveshaft cover attachment channel for cracks in the area directly below the 90 degree gearbox attachment fitting. Cleanliness of chain, and condition of aft cables and grommets. Inspect chain/sprocket access cover attachment rivets for looseness and condition. Inspect for loose or missing rivets attaching the 90 degree gearbox attachment fitting.

(*Id.*)

The Maintenance Instructions contain over 1000 pages of detailed instructions for inspecting and maintaining UH-1s. (See DX H, Ex. 3 at i-iii.) It prescribes detailed procedures for inspecting and maintaining the tailboom assembly. (See *id.*, Ex. 3 ¶ 2-280.) Paragraph 2-281 describes the tailboom assembly. Paragraph 2-282 provides instructions for removing the tailboom. Paragraph 2-283, which governs inspection of the tailboom assembly reads in full:

2-283. Inspection—Tailboom Assembly. Refer to paragraph 2-295. Tailboom Structure, for classification of damage to tailboom structure and paragraphs 2-289 and 2-291 for inspection of elevator assembly.

- a. Inspect tailboom attach fittings and fuselage attach fittings for cracks, corrosion, wear (refer to Table 2-7 and figure 2-64).
- b. Inspect condition of sealing tape located on aft fuselage bulkhead.

(*Id.*, Ex. 3 ¶ 2-283 (emphasis in original).) Paragraph 2-295 refers the reader to table 2-7. (*Id.*, Ex. 3 ¶ 2-295.) Table 2-7, entitled “Classification of Damage—Tailboom Structure,” contains specific instructions for repairing a variety of defects in the tailboom assembly, including cracks in the forward spar of the vertical fin. (DX H, Ex. 3 at 2-223, Table 2-7 m.)

C. DynCorp's Contract with the Army

Pursuant to a contract⁶ between DynCorp and the Army, DynCorp "inspects and maintains aircraft at the unit and intermediate level[s] at Fort Rucker pursuant to standards promulgated by the Army." (DX H ¶ 2.) DynCorp has presented evidence that it is not permitted to perform any inspection or maintenance on Army aircraft that is not set forth in "Army technical manuals with any permitted deviations therefrom." (*Id.*; *see* DX F at 216-17; DX G ¶¶ 2, 3.)⁷ Plaintiffs have presented portions of the written memorandum of the contract between DynCorp and the Army. (*See* PX 9.)

D. The Army Changed Its Inspection Procedure After the Subject Accident

The Army sets the standards by which its aircraft are to be inspected and maintained. (DX F at 216.) When considering modifications to its maintenance and inspection criteria for UH-1s, the Army analyzes suggested changes based on the operating environment of the UH-1 fleet, its mission for those aircraft, and the future use of those aircraft.⁸ The AD and MAB suggested deviations from the inspection and maintenance that the Army had previously approved for its UH-1s. (DX F at 217.) Although the Army considered the AD and the MAB

⁶ Aircraft Maintenance Contract DABTOI-98-C-0014 dated September 24, 1998. (DX G ¶ 2; *see* PX 9.)

⁷ This evidence consists of affidavits of David Thill, Director of Safety at DynCorp, and Forrest Holcomb, Foreman, Quality Control at DynCorp, and the deposition testimony of Ralph Vemmer. Although the record does not indicate Vemmer's position, plaintiffs have not contested defendant's assertion in its brief that Vemmer is an aeronautical engineer employed by AMCOM, (*see* Def.'s Brief at 9-10), which is the Army unit that promulgates and approves the technical manuals for inspection and maintenance of UH-1s, (DX G ¶8).

⁸ For example, in 1992, the Army ceased performing "bare bones" inspections on UH-1s at its depot-level maintenance site at CCAD due to monetary constraints and the Army's decision to phase them out of the fleet. (DX M at 91-93.)

prior to the date of the accident, it decided not to implement them. (*Id.*) Responses to inquiries from Congressman Terry Everett and Senator Richard Shelby after the subject crash set forth the Army's reasons for not having adopted the recommended changes to its inspection procedures. (*See* DX O, P.) First, the Army UH-1H flight spectrum did not involve the high number of high-power events that civilian operators incurred during logging and heavy lift operations. (DX O; DX P at 1.) Second, the long history of UH-1 operation indicated no accidents like the subject accident. (*Id.*) Third, both the AD and the MAB described aircraft skin modification to facilitate inspection, but neither recommended a solution to the problem. (DX P at 1-2.)

After the subject crash, the Army changed the procedures for inspecting the vertical fin span. On June 9, 1999, the Army issued an emergency technical bulletin entitled "Mandatory Initial and Recurring Inspection of Tail Boom Vertical Fin Spar Assembly for All UH-1 Series Aircraft." (DX Q at 1.) This bulletin required alteration of the aircraft to permit better inspection of the spar, and implemented an enhanced visual inspection using a flashlight and a 10x magnifying lens. (*See* DX Q at 2-4, 18-19.) The bulletin also implemented tap hammer and x-ray inspections of the vertical fin spar. (*See* DX Q at 2.)

II. Summary Judgment Standard

Summary judgment is appropriate when "there is no genuine issue as to any material fact and . . . the moving party is entitled to a judgment as a matter of law." FED.R.CIV.P. 56(c). The party asking for summary judgment bears the initial burden of showing that no genuine issues exist. *See Clark v. Coats & Clark, Inc.*, 929 F.2d 604, 608 (11th Cir. 1991); *see Adickes v. S.H. Kress & Co.*, 398 U.S. 144, 157 (1970). Once the moving party has met his burden, Rule 56(e) requires the nonmoving party to go beyond the pleadings and show that there is a genuine issue

for trial. *See Celotex Corp. v. Catrett*, 477 U.S. 317, 324 (1986). A dispute is genuine “if the evidence is such that a reasonable jury could return a verdict for the nonmoving party.”

Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986).

In deciding a motion for summary judgement, the judge’s function is not to “weigh the evidence and determine the truth of the matter but to determine whether there is a genuine issue for trial.” *Id.* at 249. Credibility determinations, the weighing of evidence, and the drawing of inferences from the facts are left to the jury, and therefore the evidence of the nonmovant is to be believed and all justifiable inferences are to be drawn in his favor. *See id.* at 255. Nevertheless, the nonmovant need not be given the benefit of every inference but only of every *reasonable* inference. *See Brown v. City of Clewiston*, 848 F.2d 1534, 1540 n.12 (11th Cir. 1988).

III. Discussion

A. DynCorp’s Motion to Strike

DynCorp filed a Motion to Strike Portions of the Affidavits of B.J. Sammons, Richard McSwain; Deposition Testimony of Steve Powell, and Certain Documents. A motion to strike expert testimony should be granted when the testimony concerns matters not within the expert’s personal knowledge, area of competence, or expertise. *See F.R.C.P. 56(e); Montgomery v. Noga*, 168 F.3d 1282, 1302-03 (11th Cir. 1999). A motion to strike should also be granted when an expert’s opinion fails to provide specific facts to support his conclusory allegations. *See Evers v. General Motors Corp.*, 770 F.2d 984, 986 (11th Cir. 1985). When an expert’s opinion embodies nothing more than a legal conclusion, it exceeds the scope of permitted opinion testimony and is not admissible. *See United States v. Scop*, 846 F.2d 135, 139 (2d Cir. 1988).

In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), the United States Supreme Court explained the role of district courts in excluding certain expert scientific testimony that parties seek to present to the jury. To decide whether expert scientific testimony is admissible, the court must determine that the evidence is both reliable and relevant. *Id.* at 589. In the context of Federal Rule of Evidence 702, the Court set out four non-exclusive factors to aid in the determination of whether the methodology is reliable:

- (i) whether the theory or technique has been tested;
- (ii) whether the theory or technique has been subjected to peer review and publication;
- (iii) the known or potential rate of error of the method used and the existence and maintenance of standards controlling the technique's operation; and,
- (iv) whether the theory or method has been generally accepted by the scientific community.

Id. at 593-94. In other words, a district court must assess “whether the reasoning or methodology underlying the testimony is scientifically valid and [] whether that reasoning or methodology properly can be applied to the facts in issue.” *Id.* at 592-93. The Court added, however, that “[m]any factors will bear on the inquiry, and we do not presume to set out a definitive checklist or test.” *Id.*

In *General Electric Company v. Joiner*, 522 U.S. 136, 142 (1997), the Supreme Court reaffirmed its view that district courts must act as a “gatekeeper” in screening proffered scientific testimony.⁹ The Court in *Joiner* emphasized that “nothing in either *Daubert* or the Federal Rules

⁹ District courts to perform this special “gatekeeping” role even when the task is difficult. “[N]either the difficulty of the task nor any comparative lack of expertise can excuse the judge from exercising the ‘gatekeeper’ duties that the Federal Rules impose” *Id.* at 148 (Breyer, J., concurring). “These stricter standards are necessary because of the potential impact on the jury of expert testimony.” *Allison v. McGhan Medical Corp.*, 184 F.3d 1300, 1310 (11th

of Evidence requires a district court to admit opinion evidence which is connected to existing data by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered." *Id.* at 146 (emphasis added).

In *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999), the Supreme Court held that *Daubert* also applies to non-scientific expert testimony:

We agree with the Solicitor General that “[t]he factors identified in *Daubert* may or may not be pertinent in assessing reliability, depending on the nature of the issue, the expert’s particular expertise, and the subject of his testimony.” . . . The conclusion, in our view, is that we can neither rule out, nor rule in, for all cases and for all time the applicability of the factors mentioned in *Daubert*, nor can we now do so for subsets of cases categorized by category of expert or by kind of evidence. Too much depends upon the particular circumstances of the particular case at issue.

Daubert itself is not to the contrary. It made clear that its list of factors was meant to be helpful, not definitive. Indeed, those factors do not all necessarily apply even in every instance in which the reliability of scientific testimony is challenged. It might not be surprising in a particular case, for example, that a claim made by a scientific witness has never been the subject of peer review, for the particular application at issue may never previously have interested any scientist.

Id. at 150-51.

The Court warned that district courts must be given great latitude in deciding if the factors listed in *Daubert* are applicable to the facts of the case at issue:

The trial court must have the same kind of latitude in deciding *how* to test an expert’s reliability, and to decide whether or when special briefing or other proceedings are needed to investigate reliability, as it enjoys when it decides *whether or not* that expert’s relevant testimony is reliable Thus, whether *Daubert’s* specific factors are, or are not, reasonable measures of reliability in

Cir. 1999).

a particular case is a matter that the law grants the trial judge broad latitude to determine. *See Joiner, supra*, at 143.

Id. at 152-53.

[W]e conclude that the trial judge must have considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable. That is to say, a trial court should consider the specific factors identified in *Daubert* where they are reasonable measures of the reliability of expert testimony.

Id. at 152.

1. *Affidavit of B.J. Sammons*

Sammons was the lead mechanic on Army aircraft for the “Flat Iron” fleet, at Cairns Field, Fort Rucker, which included the accident helicopter. (PX 7 at 1.) Before his retirement Sammons had been doing maintenance on military aircraft since 1956 and has worked on UH-1s since the late 1950s or early 1960s. (*Id.*) Sammons retired April 30, 1999, one day before this crash. (*Id.*) Sammons testified that he is familiar with “all maintenance protocol involving the UH-1.” (*Id.*) Plaintiffs assert that Sammons is qualified to testify about the types of inspections that are performed on the UH-1, how the inspections are supposed to be carried out, and what kinds of problems or defects certain inspections would disclose. (Plaintiffs’ Response to DynCorp’s Motion to Strike [“Daubert” Motion] (“Pl.’s Resp. Strike”) at 3.) *See Tischler v. Vrabel*, 2000 WL 1672315, at *5 (N.D. Ohio Sept. 13, 2000) (finding experienced mechanic competent to render expert testimony on standards for preventive maintenance examinations).

DynCorp asserts that there is no indication in the affidavit of B.J. Sammons (“Sammons affidavit”) that he has any knowledge, skill, experience, training, or education which would

qualify him as an expert in the fields of metallurgy, crack propagation, analysis of crack propagation, accident investigation, or the interpretation of government contracts. (Def.'s Mot. Strike at 6.) DynCorp also asserts that Sammons's opinions should be excluded because plaintiffs have failed to present any evidence which establishes the reliability of Sammons' opinions as is required by *Daubert* and *Kumho*. (*Id.*) Additionally, DynCorp asserts that Sammons's opinions are due to stricken because no factual basis is given for his opinions other than references to documents which he is not qualified to interpret. (*Id.*) Therefore, DynCorp argues that the portions of Sammons affidavit that render opinions regarding the visibility of the fatigue cracks before the crash, the requirements of the DynCorp/Army contract, and the alleged breach of contract should be struck because Sammons is not qualified to assert such opinions under Rule 702. (*Id.*)

Plaintiffs have conceded that the following portions of Sammons affidavit should be stricken:

1. The following portions of paragraph four. "I am of the opinion that the cracks existed on the subject helicopter during the time of the October, 1998, phase inspection." ("Pl.'s Resp. Strike at 8.) "The cracks existed in the vertical fin on this date." (*Id.*)
2. All of paragraph six. "After reviewing the maintenance contract between the Army and DynCorp I know now that the contract . . ." (*Id.*)
3. All of paragraph seven except the second sentence, which reads: "On one or more of these inspections, the cracks of the vertical fin spar should have been detected by DynCorp." (*Id.*)
4. The last sentence of paragraph nine. "This is a strong indication that the aircraft was subject to inferior maintenance in violation of the government contract with the U.S. Army." (*Id.*)
5. All of paragraph ten except the second sentence, which reads: "As the lead mechanic at Flat Iron, I was never advised by DynCorp quality control of the problems with cracks in the vertical fin spar which was in violation of the

maintenance contract between DynCorp and the Army.” (*Id.*)

In addition, the court orders the following portions of Sammons affidavit struck.

1. All of paragraph eight which begins, “I have reviewed the deposition testimony of the Bell metallurgical field investigator, Mr. Steve Powell, who investigated the cracks on the subject helicopter and I am in agreement . . .” should be struck. Sammons has no expertise in the fields of crack propagation analysis or accident investigation. Although Sammons’s experience as a helicopter mechanic qualifies him to testify about how the inspection and maintenance of UH-1s is or ought to be done, he is not qualified to testify about the existence or detection of the crack prior to the accident.
2. The portion of paragraph ten in sentence two which reads, “which was in violation of the maintenance contract between DynCorp and the Army” should be stricken, because Sammons has no expertise in contract interpretation.

2. Affidavit of McSwain

Richard H. McSwain (“McSwain”) is as a consulting materials engineer with experience in materials failure analysis. (PX 8 ¶¶ 1, 2.) McSwain has been employed in materials engineering and materials failure analysis for the past twenty-three years. (*Id.* ¶ 2.) McSwain was previously employed by the United States Navy as a materials engineer with responsibility for materials failure analysis and accident investigation. (*Id.* ¶ 2.) DynCorp does not dispute the expert qualifications of McSwain. Plaintiffs have agreed that the word “last” should be stricken from paragraph eight. (Pl.’s Resp. Strike at 11.)

DynCorp argues that paragraphs five, six, and seven are due to be stricken because “they do nothing more than re-state conclusions reached by the U.S. Army and Bell Helicopter Textron.” (DynCorp’s Motion to Strike (“Def.’s Mot. Strike”) at 12.) DynCorp asserts that these paragraphs fail the “helpfulness” requirement of *Daubert* because they do nothing to aid the understanding of the trier of fact. (*Id.* at 12.) The court rejects this argument and denies DynCorp’s Motion to Strike as it pertains to paragraphs five, six, and seven of McSwain’s

affidavit. In paragraphs five, six, and seven, McSwain does not state his own opinion, he merely relates what other investigators have concluded, so his expert status is irrelevant. *See Quiles v. Sikorsky Aircraft*, 84 F. Supp. 2d 154, 161 (D.Mass. 1999) (“However, Potts did not in fact give his own opinion, instead relating what investigators concluded, so his expert status is irrelevant.”). The affidavit refers to the conclusions reached by the Army and Bell that the vertical fin spar failed by progressive fatigue cracking, (PX 8 at ¶ 5), that initiated in the second rivet hole from the tail boom, (*Id.* at ¶ 6), and had been present for a considerable period of time, (*Id.* at ¶ 7). The purpose of these statements was to serve as background for his conclusions and to explain the evidence he examined and relied upon.

DynCorp also argues that paragraphs nine and ten are due to be stricken because “[p]laintiffs have failed to establish the applicability of the Bell Helicopter Textron report No. 20599M-164, UH-1 Fin Spar Crack Propagation Test Results dated October 26, 1999, to the tail boom at issue here. Indeed, the propagation test was performed on the tail boom with a different configuration than the tail boom on the subject aircraft.” (Def.’s Mot. Strike at 12.) Therefore, DynCorp argues, the propagation test is irrelevant. (*Id.*)

Plaintiffs assert that “there is no evidence of what ‘a different configuration’ means, in context of this case and these two tail booms.” (Pl.’s Resp. Strike at 9.) The part number of the test boom was 205-032-800-101. (PX 129 at 1.) The part number of the boom on the accident helicopter was 205-032-800-071. (DX B at 1.) The assignment of part numbers is controlled by the design characteristics of the part in terms of engineering drawings, specifications standards,

and inspection requirements. (PX II C at 2-3.)¹⁰ Part number 205-032-800-71 may be used on both UH-1H and UH-1V helicopters. (Id. at 3.) Plaintiff argues that because the part numbers for both tail booms have “032” as second numerical sequence, the tail booms are identical. (Pl.’s Resp. Strike at 10.)

There is evidence of enough similarity between the accident tail boom (#205-032-800-71) and the test tail boom (#205-032-800-101) that a test of the test tail boom may be used to extrapolate relevant evidence concerning the accident tailboom. Part numbers are governed by engineering drawings and design characteristics. (PX II C at 2.) The propagation test results refer to “BHTI Drawing No. 205-032-800, ‘Tailboom Assembly’.” (See PX 129 at 1.) Therefore, the prefix “205-032-800” indicates that tail booms numbered 205-032-800-71 and 205-032-800-101 have the same fundamental design characteristics.¹¹ The court finds that data gathered in the Bell propagation test on the tailboom of a UH-1H helicopter may be used to extrapolate data on crack propagation for a UH-1V helicopter. Therefore, the court rejects DynCorp’s motion to strike paragraph nine.

DynCorp also asserts that paragraph ten should be excluded because McSwain fails to establish a factual foundation for his statement that fatigue cracks on the subject aircraft were “present and detectable.” (Def.’s Mot. Strike at 13.) First, DynCorp argues that McSwain fails

¹⁰ Plaintiffs’ Response to DynCorp’s Motion to Strike [“Daubert” Motion] has exhibits attached. These exhibits will be referred to as “PX II” followed by the corresponding tab letter.

¹¹ The record contains evidence that the first three numerical sequences of the part number specify the part’s essential design characteristics. (See e.g., DX K at 1 (“Applicabl[e] . . . to part number 205-032-899, 205-030-846, or 205-032-851, **all dash numbers . . .**”) (emphasis added).)

to indicate the method by which the fatigue cracks were “detectable.” (*Id.*) Second, DynCorp argues that paragraph ten should be stricken because the affidavit fails to indicate at which level of maintenance such cracks could have been detected. (*Id.* at 13.)

In response to DynCorp’s argument that McSwain did not opine that the crack was “visible” prior to the crash, but only “detectable,” plaintiffs point to McSwain’s affidavit of November 13, 2000. (Pl.’s Resp. Strike at 10.) There, McSwain states:

On August 17, 2000, I executed and submitted an Affidavit concerning a helicopter crash which occurred on May 1, 1999. In paragraph 10 of the Affidavit, I stated that the fatigue crack would have been present and detectable at the inspection performed 112 hours prior to the accident event. In using the word “detectable” I meant that the cracks were visible to the naked eye and also would have been detectable by the use of nondestructive testing.

(PX II D.) In reply, DynCorp argues that “there is no foundation to indicate that McSwain has even seen a UH-1 aircraft much less has the expertise necessary to know whether the cracks would have been visible under the procedures with which DynCorp was tasked.” (DynCorp’s Reply to Plaintiff’s Response to DynCorp’s Motion to Strike (“Def.’s Reply Strike”) at 7.) Second, DynCorp calls McSwain’s statement that the cracks were visible a “naked assertion.” (Def.’s Reply Strike at 7.) DynCorp also argues that McSwain’s November affidavit is untimely because it was submitted in violation of this court’s scheduling order. (Def.’s Reply Strike at 8.) DynCorp also asserted that paragraph ten should be stricken because McSwain fails to indicate at which level of maintenance such cracks would have been detected. (Def.’s Mot. Strike at 13.)

Plaintiffs argue that McSwain knows what kinds of inspections were done and his statement that the crack was detectable means that in his opinion the types of inspections that

were done should have discovered the cracks. (Pl.'s Resp. Strike at 10.)

The court grants DynCorp's Motion as it pertains to paragraph ten in part. McSwain is qualified to testify whether a crack would be "detectable by the use of nondestructive testing" but not whether the crack would be "visible to the naked eye." Because there is no evidence that McSwain has seen a UH-1 aircraft before, there are no facts by which the court may infer that McSwain is competent to testify about whether the cracks would have been detectable before the crash by a visual inspection.¹²

3. Deposition of Steve Powell

Plaintiffs offered Steve Powell's deposition to establish that the fatigue cracks in the vertical tail fin were visible prior to the crash. Plaintiffs argue that Powell is qualified to testify about the fatigue cracks. (Pl.'s Resp. Strike at 11-13.) Powell has been part of the "field investigation group" that examines and tests parts that have fractured while being used in the field since 1970. (PX II E at 10-11.) Powell examines the crack striations in fractured parts with an electron microscope. (PX II E at 24.) Powell then determines from the crack striations the way in which the crack grew during its propagation. (PX II E at 35.) Powell, who is not a metallurgist, next makes his report and sends it on to a metallurgist. (PX II E at 25.)

Powell investigated the wreckage resulting from the crash which is the basis of this case. (PX II E at 13.) Powell determined that the fracture was through the number two rivet hole. (PX

¹² McSwain's testimony is relevant to the question of whether DynCorp breached its Alabama state tort law duty to exercise reasonable care in inspecting the helicopter. However, because there is no evidence to indicate that McSwain was familiar with the inspection protocol mandated by the Army, this testimony is not relevant to the question of whether DynCorp inspected the aircraft according to the Army's specifications.

II E at 15.) He explains that the crack in this case was a fatigue crack, through all layers of the spar, that had occurred over a long period of time. (PX II E at 14-17.) Powell determined that there had been rubbing and movement in the number two rivet hole over a long period of time because he saw that "the rivet head abraded away resulting from rubbing and movement." (PX II E at 19-20.) Powell formed the ultimate conclusion that the fatigue crack should have been picked up during normal maintenance and inspection. (PX II E at 20.) He stated that the fatigue cracks would have been visible to the naked eye before the crash and should have been visible through the inspection port. (PX II E at 38-39.)

Powell admits that he does not know what inspection procedures the Army requires DynCorp to follow to inspect helicopters and that he does not know whether the cracks were visible under the Army's inspection procedures. (PX II E at 30-31, 37, 39.) Plaintiffs assert that this admission "takes nothing away from his opinion that this crack had been there a long time and was visible through the inspection port." (Pl.'s Resp. Strike at 12.) Plaintiff also asserts that DynCorp has never asserted that it did not have a duty to look through the inspection port at the vertical fin spar. (Pl.'s Resp. at 12.) Powell also admits he did not perform any striation counting tests on the accident helicopter, which would have determined the rate at which the crack grew. (PX II E at 35.)

DynCorp moves to strike Powell's testimony on the basis that his opinions "are outside his knowledge, skill, experience, training, or education, as: (1) there is no evidence indicating he had any training or expertise in determining what was or was not visible in the past; (2) he has no metallurgical experience; and (3) he does not know whether the cracks were visible or not visible under inspection criteria of the Army prior to the crash." (Def.'s Mot. Strike at 14.)

DynCorp asserts that Powell's statements fail to satisfy the relevance and reliability standards set forth in *Daubert* because nothing within his testimony indicates the methodology or theory he used as the basis for his opinions. (*Id.* at 14-15.) DynCorp also asserts that Powell's statements are conclusory because Powell fails to provide any fact upon which his opinions are based. (*Id.* at 15.)

The court strikes all portions of Powell's deposition referring to whether the fatigue crack should have been discovered during normal maintenance because Powell has admitted he has no knowledge of DynCorp's maintenance procedures. (See PX II E at 30-31, 37, 39.)

4. Exhibit "114" ("Exhibit K")

Plaintiffs offer "Plaintiffs' Exhibit 114" ("Exhibit K")¹³ in support of their argument that the cracks in the vertical fin spar of the subject aircraft were visible prior to the crash. A handwritten note on Exhibit K provides: "Cracked skin should have been visible 1 to 2" above the tailcone cover." (DX III at K.)¹⁴

DynCorp asserts that plaintiffs have failed to properly authenticate the handwritten notes on Exhibit K, as required by the federal rules of evidence. (Def.'s Mot. Strike at 15; *see* DX III K.) Second, DynCorp asserts that Exhibit K should be stricken because plaintiffs "have failed to

¹³ DynCorp states that what plaintiffs proffer as exhibit "114" is actually found on page BE019715 of deposition exhibit 115. (Def.'s Mot. Strike at 15.) However, Exhibit K attached to DynCorp's Reply to Plaintiff's Response to DynCorp's Motion to Strike shows the exhibit as page number BE 019698. Therefore, the court will refer to Exhibit "114" as Exhibit K, as it is cited in DynCorp's Reply to Plaintiff's Response to DynCorp's Motion to Strike.

¹⁴ DynCorp filed DynCorp's Reply to Plaintiff's Response to DynCorp's Motion to Strike with exhibits attached. References to these exhibits will be cited as ("DX III") and the corresponding exhibit.

establish the relevancy of the contents of Exhibit [K], as there is no indication on the document as to the time frame in which the cracks referenced were allegedly visible." (Def.'s Mot. Strike at 15.) Third, DynCorp asserts that Exhibit K should be stricken because the information contained thereon is expressed in the form of an opinion for which no foundation has been laid. (*Id.* at 16.) DynCorp also asserts that plaintiffs have failed to establish the identity of the writer, the writer's qualifications to proffer such an opinion, the writer's basis for such an opinion, or the reliability of the opinion itself as is required for admission under Rule 702. (*Id.*) Finally, DynCorp asserts that references to Exhibit K should also be struck from Plaintiffs' Brief in Opposition because plaintiffs have has mis-characterized the information contained in Exhibit K. (*Id.*)

Plaintiffs argue that Exhibit K is authenticated. Plaintiffs assert that the exhibit is part of Bell's business records. (Pl.'s Resp. at 13.) Second, plaintiffs assert that the notations, on their face, appear to be from persons with personal knowledge. (Pl.'s Resp. at 13.) Third, Powell testified that the exhibit was his report. (PX II E at 12, 24, 26.) Fourth, another handwritten note on the exhibit identifies Powell. (Pl.'s Resp. at 13.)

The court has already stricken all portions of Powell's deposition referring to whether the fatigue crack should have been discovered during normal maintenance because Powell has admitted he has no knowledge of DynCorp's maintenance procedures. *See supra*, at 21; (*see also* PX II E at 30-31, 37, 39.) Therefore, Exhibit K should also be stricken.¹⁵ Additionally, the

¹⁵ Even if Exhibit K should not be stricken, it is not relevant to the issue of whether DynCorp inspected the accident helicopter in accordance with the inspection protocol mandated by the Army, because Powell admits that he has no knowledge of the inspection protocol. (*See* PX II E at 30-31, 37, 39.)

court finds that Exhibit K should be stricken because there has been no foundation laid for the conclusion that the “[c]racked skin should have been visible 1 to 2" above the tailbone cover.”

B. DynCorp's Motion for Summary Judgment

1. *The Government Contractor Defense: Boyle v. United Technologies Corp.*

DynCorp asserts that it is immune from plaintiffs' claims under the government contractor defense as articulated in *Boyle v. United Technologies Corp.*, 487 U.S. 500 (1988). The government contractor defense is an affirmative defense that vests an independent contractor performing work for the government with complete immunity from state-based tort claims. In *Boyle*, a Marine helicopter copilot, was killed when his military helicopter crashed off the coast of Virginia during a training exercise. 487 U.S. at 502. Although the copilot survived the crash, he was unable to escape from the helicopter and drowned. *Id.* His father sued the helicopter manufacturer under two state law tort claims, alleging that the manufacturer (1) had defectively repaired the helicopter's flight control system, which allegedly malfunctioned and caused the crash, and (2) had defectively designed the copilot's emergency escape hatch, which opened out instead of in, rendering the hatch ineffective when the helicopter was submerged. *Id.* at 503. The jury returned a verdict for Boyle's father, and the trial court denied the defendant-manufacturer's motion for judgment notwithstanding the verdict. *Id.*

The Supreme Court decided the issue of “when a contractor providing military equipment to the Federal Government can be held liable under state tort law for injury caused by a design defect.”¹⁶ *Id.* at 502. In deciding the issue, the Court reasoned that “a few areas, involving

¹⁶ The Court did not address the defective repair claim. See 487 U.S. at 503-04.

‘uniquely federal interests,’ . . . are so committed by the Constitution and laws of the United States to federal control that state law is pre-empted and replaced, where necessary, by federal law of a content prescribed . . . by the courts” *Id.* at 504. Next, the Court reasoned that when such a “uniquely federal interest” is implicated, preemption of state law is appropriate when a “significant conflict” exists between a federal interest and the operation of state law. *Id.* at 507.

Applying these principles, the Court determined that holding a military procurement contractor liable under state law for design defects implicated two areas involving “uniquely federal interests”: (1) the United States’ rights and obligations under its contracts, and (2) the civil liability of federal officials for actions taken in the course of their duty. *Id.* at 504-05. Federal officials enjoy immunity from suits arising out of the performance of discretionary acts. *Id.* at 511. Designing aircraft involves “not merely engineering analysis but judgment as to the balancing of many technical, military, and even social considerations, including specifically the trade-off between greater safety and greater combat effectiveness.” *Id.* It makes little sense to subject a contractor to state tort suits for building aircraft that conform to designs fashioned or approved by a federal official when the federal official would be entitled to immunity from suits arising out of defects in those designs. *Id.* Furthermore, denying immunity to the contractor would functionally deny the government’s immunity for the discretionary acts of its officials because the “financial burden of judgments against the contractors would ultimately be passed through, substantially if not totally, to the United States itself, since defense contractors will predictably raise their prices to cover, or to insure against, contingent liability for the Government-ordered designs.” *Id.* at 511-12. The court concluded that a state law holding

government contractors liable for design defects in military equipment presents a “significant conflict” with federal policy, and must therefore be displaced. *Id.* at 512. The Court recognized the government contractor defense and established three conditions for its application:

Liability for design defects in military equipment cannot be imposed, pursuant to state law, when (1) the United States approved reasonably precise specifications; (2) the equipment conformed to those specifications; and (3) the supplier warned the United States about the dangers in the use of the equipment that were known to the supplier but not to the United States.

Id. The first two conditions assure that the suit is one in which an official’s discretionary function immunity could be frustrated, by insuring that the “design feature in question was considered by a Government officer, and not merely by the contractor itself.” *Id.* The third condition assures the federal officer’s exercise of discretion in choosing or approving a design is not impeded by a lack of relevant information, by imposing on the supplier the duty to inform the government of dangers in the use of the equipment that the supplier, but not the government, knows about. *Id.* at 512-13.

2. The Application of Boyle to Service Contracts

Before considering the application of the three-prong test of *Boyle*, the court must first determine whether *Boyle* applies at all. *Boyle* was decided in the context of a military procurement contract for the manufacture of specific equipment. At issue in this motion, however, is a contract for performance, not procurement.

There is a split of authority with respect to the applicability of *Boyle* outside the sphere of military procurement contracts. The court is aware of no circuit decision addressing the applicability of *Boyle* to government service, as opposed to procurement, contracts. A number of

of district courts have applied the defense to service contracts. *See Guillory v. Ree's Contract Serv., Inc.*, 872 F. Supp. 344, 346 (S.D.Miss. 1994) (reasoning that the defense applies to all government contractors); *Richland-Lexington Airport Dist. V. Atlas Properties, Inc.*, 854 F. Supp. 400, 423 (D.S.C. 1994) (holding that *Boyle* applies to service contracts); *Lamb v. Martin Marietta Energy Sys., Inc.*, 835 F. Supp. 959, 966 n.7 (W.D.Ky. 1993) (finding no reason to limit *Boyle* to procurement contracts, as opposed to performance contracts); *Crawford v. Nat'l Lead Co.*, 784 F. Supp. 439, 445 n.7 (S.D.Ohio 1989) (holding that government contractor defense is viable with regard to performance contracts). *But see Amtreco, Inc. v. O.H. Materials, Inc.*, 802 F. Supp. 443, 445 (M.D.Ga. 1992) (refusing to extend the defense to claims based upon intentional misconduct arising out of the performance of a service contract).

By its reference to *Yearsley v. W. A. Ross Construction Co.*, 309 U.S. 18 (1940), the *Boyle* decision is itself instructive as to the question of the applicability of the defense to service contractors. *See* 487 U.S. at 505-06. In *Yearsley*, the defendant contractor injured the real property of riparian landowners while constructing dikes in the Missouri River pursuant to a contract with the United States. 309 U.S. at 19. The construction project was statutorily authorized by Congress and supervised by federal officials. *Id.* The plaintiffs sought to recover damages on the ground that the defendant had built dikes on the Missouri River and, by using “large boats with paddles and pumps to produce artificial erosion,” had washed away a part of their lands. *Id.* The Supreme Court rejected the landowners’ suit, holding that the contractor could not be held liable for the injuries resulting from actions that Congress could and did authorize the contractor to perform. *Id.* at 21-22. The Court reasoned that “there is no ground for holding [the Government’s] agent liable who is simply acting under the authority [] validly

conferred. The action of the agent is ‘the act of the government.’” *Id.* at 22. The *Boyle* Court did not overrule *Yearsley*, but relied upon it, stating that the “federal interest justifying this holding [in *Yearsley*] surely exists as much in procurement contracts as in performance contracts; we see no basis for a distinction.” *See* 487 U.S. at 506. Therefore, although it did not hold that the government contractor defense applied to service contracts, the *Boyle* Court reasoned that there is no reason for applying the defense differently in the context of procurement contracts than in that of service contracts. *See id.*

Although the Eleventh Circuit has not confronted the issue currently before the court, its prior treatment of the government contractor defense is instructive. In *Dorse v. Eagle-Picher Industries, Inc.*, the court stated that the defense is “not strictly limited to design defect cases,” but that *Boyle*’s “three-part test . . . is necessarily limited to design defect cases.” 898 F.2d 1487, 1489 (11th Cir. 1990). *Dorse* resolved the dilemma of applying *Boyle* to a “failure to warn” case with a two-prong test derived from the reasoning of the *Boyle* Court. *See id.* First, for the defense to be available, the case must concern an area of “uniquely federal interest.” *Id.* *See Boyle*, 487 U.S. at 504. Second, there must be a “significant conflict [] between an identifiable federal policy and the operation of state law.” *Dorse*, 898 F.2d at 1489. *See Boyle*, 487 U.S. at 507. Under the Eleventh Circuit’s *Dorse* decision, the government contractor defense is not limited to design defect cases, but can be applied to other cases where (1) there is a “uniquely federal interest,” and (2) there is a “significant conflict” between some federal interest and state law. *See* 898 F.2d at 1489.

The court is of the opinion that the government contractor defense applies to the service contract between the government and DynCorp. First, there is a “uniquely federal interest”

involved in this case: the maintenance of military equipment. There is no reason why the maintenance of military equipment would not be a “uniquely federal interest” when the acquisition of the same equipment would be. Second, the duties imposed by Alabama law upon DynCorp could pose “significant conflicts” with those imposed by its contract with the government. Plaintiffs allege that under Alabama tort law, DynCorp had a duty to inspect and maintain the helicopter according to the dictates of the emergency airworthiness directive issued by the FAA and the Mandatory Alert Bulletin issued by Bell, the manufacturer. (Compl. ¶¶ 5,6.) DynCorp’s contract with the Army, however, forbids it from performing any inspection or maintenance not set forth in the technical manuals provided by the Army. (DX G ¶¶ 2, 3; DX H ¶ 2.)

The *Boyle* Court determined that a “significant conflict” existed because the selection of the appropriate design for military equipment is a discretionary function, involving “not merely engineering analysis, but judgment as to the balancing of many technical, military, and even social considerations, including specifically the trade-off between greater safety and greater combat effectiveness.” 487 U.S. at 511. The selection of appropriate inspection and maintenance procedures for military helicopters is similarly a discretionary function, requiring recourse to engineering analysis, and the balancing of technical, military and social considerations. Like the selection of military equipment, the selection of maintenance procedures for that equipment implicates the trade-off between safety and combat effectiveness.

The *Boyle* Court also indicated that a “significant conflict” existed where the “financial burdens of judgments against the contractors would ultimately be passed through, substantially if not totally, to the United States itself, since defense contractors will predictably raise their prices

to cover, or to insure against, contingent liability for the Government ordered designs.” 487 U.S. at 511. The concern with the government bearing the financial burden for judgments against contractors is as serious in suits against service contractors as it is against procurement contractors.

Because there is a uniquely federal interest in the maintenance of military equipment, and the duties imposed upon DynCorp by state tort law pose a significant conflict with those imposed by DynCorp’s contract with the Army, the government contractor defense is available. If DynCorp can show its compliance with the three-prong test articulated in *Boyle*, then it is entitled to the government contractor defense against all plaintiffs’ claims. The undisputed evidence before the court establishes the existence of the three preconditions for invocation of the government contractor defense in this case.

a. The Army approved reasonably precise maintenance specifications

The first requirement of the government contractor defense requires that the government “approved reasonably precise specifications.” *Harduvel v. General Dynamics Corp.*, 878 F.2d 1311, 1320 (11th Cir. 1989). DynCorp inspects and maintains Army aircraft pursuant to standards set forth in technical manuals with any permitted deviations therefrom. (DX G ¶¶ 2, 3; DX H ¶ 2.) These technical manuals, which AMCOM, the Army unit that promulgates and approves such technical manuals approved, set forth precise and detailed specifications for inspection and maintenance of UH-1 helicopters, and specifically, the tailboom and vertical fin spar. (*Id.*; DX G ¶ 8; *see* DX H, Exs. 1-3.) These AMCOM-approved technical manuals contain “reasonably precise specifications” for the inspection and maintenance of the helicopter that

crashed.¹⁷ (See DX H at Exs. 1-3.)

b. The maintenance and inspection performed by DynCorp on the accident helicopter conformed to the Army's specifications

The second requirement of the *Boyle* test is met when the government-approved specifications are followed. *Boyle*, 487 U.S. at 512. DynCorp's maintenance records establish that all inspections of the vertical fin spar required of DynCorp were made appropriately and on a timely basis. (DX H ¶ 5.)

Plaintiffs assert that DynCorp breached its maintenance contract with the Army. (Pl.'s Brief at 11.) First, plaintiffs contend that DynCorp breached section C1.7 and C1.1 of the Contract. (Pl.'s Brief at 11.)

C1.7 Airworthiness Condition. The contractor shall determine the airworthiness condition of assigned or attached aircraft as required by applicable regulations and publications. Such determinations shall be based on inspection, maintenance operational checks, and test flying as required by applicable Army publications and directives.

C1.1.1: Work Objective. The performance work objective of this contract is to support the Aviation Training Brigade's required training mission with mission capable safe aircraft at the beginning of each flight period.

(PX 9L; PX 9K.) Plaintiffs argue that because the tail boom fell off the accident helicopter in flight, it was not airworthy and was furnished in an unsafe condition. (Pl.'s Brief at 11.) The contract also provides that the government will not exercise any supervision or control over

¹⁷ Plaintiffs do not dispute the contention that the Army approved the technical manuals which contain reasonably precise specifications for inspection and maintaining UH-1s. (See Pl.'s Brief 6.)

contractor personnel performing services under the contract. (PX 9D at H.10(b).) Therefore, plaintiffs assert that it was DynCorp's "responsibility, under the contract, to perform daily inspections, phase inspections and other inspections necessary to determine the airworthiness of the aircraft." (Pl.'s Brief at 11-12.) Plaintiffs' argument is unpersuasive. Although plaintiffs rely on Sammons's testimony that the aircraft was not airworthy to support this contention, (Pl.'s Brief at 12 (citing PX 7 at 4)), that portion of Sammons's testimony has been stricken, *see supra* pp. 14-15. Furthermore, by its terms, Section C1.7 requires DynCorp to determine the aircraft's airworthiness only to the extent "required by applicable regulations and publications." (PX 9L.) Therefore, absent evidence that DynCorp's performance did not conform to that prescribed by the "applicable regulations and publications," these sections provide no support for plaintiffs' contention that DynCorp breached its contract with the Army.

DynCorp is not permitted to perform any inspection or maintenance not called for in the technical manuals. (DX F at 216-19; DX G ¶¶ 2, 3; DX H ¶ 2; DX II S at 1.) Plaintiffs have presented no evidence that there are any "applicable regulations and publications" other than the AMCOM-approved technical manuals. Therefore, unless DynCorp failed to perform in accordance with the dictates of the technical manuals, it has not breached Section C1.7.

Second, plaintiffs assert that DynCorp violated section C.21.4.4 of the contract, which outlines minimum personnel qualifications. (Pl.'s Brief at 12; *see* PX 9Q.) Specifically, this section requires that "[p]ersonnel must be trained to perform or inspect repairs beyond AVUM/AVIM repairs."¹⁸ (PX 9Q at C.21.4.4(4).) This argument is without merit. Plaintiffs

¹⁸ AVUM means Aviation Unit Maintenance, and AVIM means Aviation Intermediate Maintenance.

have presented no evidence that any DynCorp employee was not adequately trained. Furthermore, examination of C.21.4.4(4) taken as a whole reveals that the intent of the subsection is to require DynCorp to educate employees about maintenance procedures covered in “special repair authorizations.” (*Id.*) Plaintiffs have presented evidence of neither a “special repair authorization” issued prior to the subject crash that concerns either the tail boom assembly or the vertical fin spar nor a “special repair authorization” to which DynCorp’s conduct did not conform.

Plaintiffs allege that DynCorp’s mechanics were not trained to look for cracks in the vertical fin spar. However, plaintiffs offer no evidence supporting their contention. To the contrary, DynCorp mechanics were trained to look for and report external or visual cracks anywhere on the aircraft. (*See* DX II U; DX II V.) The inspections of the vertical tail fin tasked to DynCorp included the daily maintenance inspections, the 150-hour phase inspections, and corrosion inspections. DynCorp was required to perform a visual inspection of the entire tail boom for cracks and other deficiencies, and was required to visually inspect the forward vertical fin spar using an inspection mirror and a flashlight. (DX II U; DX II V.)

Third, plaintiffs counter DynCorp’s assertion that it is not permitted to perform any inspection or maintenance not set forth in the appropriate technical manuals by reference to the manuals themselves. (Pl.’s Brief at 12-13.) The Daily Inspection Checklist states that “[i]ndividual inspection items contained in this manual are considered the minimum requirements for performing a daily inspection” (DX H, Ex. 2 at 1.) Plaintiffs conclude that the technical manuals only present minimum inspection requirements, which DynCorp could have exceeded without breaching its contract with the Army. (Pl.’s Brief at 12-13.) Therefore,

plaintiffs argue that DynCorp breached the contract by not training personnel to inspect beyond the minimum requirements, “so that safety items such as these cracks would be detected and corrected.” (Pl.’s Brief at 13.)

This argument is not persuasive. The entire passage from the Daily Inspection Checklist states:

Individual section items contained in this manual are considered the minimum requirements for performing a daily inspection and must be performed. The cumulative effects of inspection deferrals are unknown and could result in catastrophic failure or increased maintenance at a later date. Therefore, the use of special lettering to emphasize mandatory safety-of-flight inspection items is not to be construed as authority for deferral of other inspections.

(DX H, Ex. 2 at 1.) Therefore, when taken in context, the above-quoted language requires not that DynCorp perform inspections that are not even contained in the Checklist, but that DynCorp perform all of the inspections contained in the Checklist in a timely manner even if they are not “mandatory safety-of-flight inspection items.”

Fourth, plaintiffs assert that DynCorp breached its contract by not providing quality maintenance and was negligent because it provided inferior maintenance. (Pl.’s Brief at 13.) In support, plaintiffs refers to two contract sections mentioning quality maintenance: Sections B-16 and T1.1. (*Id.*) Section B-16 states that “[f]or this acquisition, the Government desires to emphasize mission performance, quality of maintenance, supply management, limited depot repair of parts, and cost effectiveness.” (PX 9, Ex. A.) Section T.1.1 states, “The government considers the quality of maintenance services as critical.” (PX 9, Ex. Z.) Plaintiffs argue that the separation of the tail boom demonstrates that DynCorp failed to provide quality maintenance

as required by the contract. (Pl.'s Brief at 13.)

This argument is unpersuasive. First, although B-16 emphasizes that quality of maintenance is one of the contract's purposes, it also lists other, perhaps, competing, purposes, such as mission performance, supply management, limited depot repair of parts, and cost effectiveness. (See PX 9, Ex. A.) Neither Section B-16 nor Section T.1.1 defines the term "quality of maintenance." (See PX 9, Exs. A, Z.) Neither sets out any parameters for assessing DynCorp's performance under the contract with respect to "quality of maintenance." (See *id.*) Finally, the failure of the tail boom need not indicate that DynCorp's performance did not conform to the specifications of the technical manuals. It might indicate that technical manuals, which the Army approved, were not perfect or adequate.

Fifth, plaintiffs presents four arguments by which it hopes to show that DynCorp's inspection of the aircraft was negligent, and was in breach of its contract with the Army. (See Pl.'s Brief at 14-17.) (1) Plaintiffs argue that DynCorp failed to inspect the entire tail boom when DynCorp found and repaired a crack in the tail boom in October 1998. (*Id.* at 14; see PX 7 ¶ 4.) Plaintiffs contend that when the crack was found DynCorp should have inspected the entire tail boom assembly for cracks. (See PX 7 ¶ 4.) (2) Plaintiffs also argue that DynCorp should have detected but failed to detect fin spar cracks during phase inspection. (Pl.'s Brief at 14.) At the time of the accident, the crack on the fin spar of the accident helicopter was approximately 1.25 inches. (PX 8 ¶ 9.) Based on extrapolation of the test data obtained by Bell's crack propagation test a crack of 1.25 inches would require approximately 450 flight hours. (PX 8 ¶

9.) At the time of the crash the aircraft had flown 112 hours since its last phase inspection.¹⁹ (PX 18; PX 32, Ex. D.) Therefore, plaintiffs contend that cracks were present at the time the phase inspection was completed by DynCorp on November 2, 1998. (PX 8 at ¶ 8; PX 7 at 2.) (3) Plaintiffs contend that based on the flight hours of the aircraft, these cracks had been present at least since October 1997, when the aircraft had only 7008.8 flight hours.²⁰ (Pl.'s Brief at 15; *see* PX 32A.) Thus, plaintiffs conclude that the accident helicopter had undergone at least three phase inspections while the cracks were present and visible. (PX 32, Exs. A, B, C, D.) Thus, plaintiffs maintain that DynCorp breached the maintenance contract with the Army because it repeatedly failed to detect cracks which were visible in the area of the Number 1 and Number 2 rivet holes. (Pl.'s Brief at 15.) (4) Plaintiffs contend that DynCorp failed to detect the cracks during any of its maintenance inspection. (Pl.'s Brief at 16.) DynCorp performed a corrosion control inspection the day before the crash and plaintiffs contend that the cracks were visible to the naked eye the day before the crash. (Pl.'s Brief at 16.)

Each of these four arguments points out evidence by which a jury might find that defendant negligently inspected the helicopter. Plaintiffs have proffered evidence that the cracks had been present, detectable, and yet undetected for a long time, despite the numerous inspections that DynCorp performed. However, DynCorp is not required to establish that it was

¹⁹ At the time of the crash, the helicopter had flown approximately 7,564.4 hours. (See PX 18.) At its last phase inspection, on November 2, 1998, the helicopter had flown 7,452.4 hours. (PX 32, Ex. D.) Therefore, the aircraft had flown only about 112 miles since its last phase inspection when it crashed.

²⁰ Plaintiff overstates this argument. The helicopter had flown approximately 7,564.4 hours when it crashed. (See PX 18.) Using the Bell study, the crack took approximately 450 flight hours to grow. (PX 8 ¶ 9.) Therefore, the crack began when the helicopter had flown approximately 7114.4 hours.

not negligent in order to avail itself of the government contractor defense. DynCorp must only show that it performed the inspection and maintenance procedures according to the Army's dictates. Plaintiffs have offered no admissible evidence that the cracks were detectable under the inspection procedures promulgated by the Army. Although McSwain testified that the cracks were visible to the naked, (PX II D), that testimony is not admissible, because McSwain is not competent to testify about whether the cracks were in fact visible before the crash, *see supra*, at 18. There is no evidence that the cracks were visible under the Army-promulgated inspection procedures. Therefore, none of these arguments presents evidence by which a reasonable juror could infer that DynCorp had failed to properly perform the inspection procedures prescribed by the Army.

Sixth, plaintiffs contend that DynCorp failed to adequately inspect a weakened, patched fin spar that DynCorp itself had patched. (Pl.'s Brief at 16.) The CCAD investigation reports that an area of the spar had been previously repaired. (PX 12 at 2.) The CCAD report states that the repairs may have transferred additional stress to the failed area. (PX 12 at 2.) Plaintiffs contend that DynCorp made this repair and created a dangerous condition on the accident helicopter, yet failed to make a recommendation to the Army in violation of the maintenance contract. (Pl.'s Brief at 17.) Plaintiffs' argument fails because there is no evidence that DynCorp patched the helicopter, or knew that the patch created a dangerous condition, assuming that it did. Plaintiffs present no evidence from which a reasonable jury could infer that anyone knew that such a patch could cause a dangerous condition prior to the subject crash.

Seventh, plaintiffs contend that DynCorp was performing inferior maintenance on the Flat Iron fleet because an inspection after plaintiff's crash revealed that four out of the seven

remaining UH-1 aircraft had cracks in the vertical fin spar which DynCorp failed to detect. (Pl.'s Brief at 17; *see* PX 17.) This is evidence that DynCorp may have negligently inspected the helicopter. However, this evidence is not relevant to the question of DynCorp's conformity to the Army's inspection and maintenance procedures, because defendants have presented evidence that the cracks were invisible under the Army's inspection procedures and detectable only by an x-ray inspection process that the Army did not prescribe until after the crash of the accident helicopter. (DX II X.)

Eighth, plaintiffs rely on contract §§ C5.4.2.4 and H.20 in contending DynCorp must comply with all federal, state, and local laws and regulations in maintaining the Army's UH-1's and was therefore required to implement the AD and the MAB concerning inspection of the tail boom and vertical spar. (Pl.'s Brief at 17-18.) However, these contract sections relate only to "regulations and policies concerning environmental protection," (§ H.20), and to laws "with respect to spills of fuel and oil and controllable organic emissions." (§ C5.4.2.4). (*See* PX 9, Exs. H, V.) Furthermore, the Army and DynCorp agree that FAA regulations do not apply to Army-owned UH-1's. (*See* DX F at 216-19; DX II S at 1; DX G ¶¶ 2, 3.) Therefore, there is no evidence that the contract required or even allowed DynCorp to implement the AD or MAB.

Finally, plaintiffs assert that cracks were "detectable" prior to the crash if proper maintenance procedures were followed. Plaintiffs fail to identify by which methods or at which level of maintenance the subject cracks were "detectable." The method by which other cracks were detected, examination by x-ray, was not permitted by the Army until after the crash. DynCorp performed all inspection procedures with which it was tasked, visually inspecting for external cracks. There is no evidence that DynCorp or the Army ever discovered a crack in a

UH-1 vertical tail spar at the unit or intermediate levels prior to the time the Army instituted x-ray inspections post-crash. (DX H.) Plaintiffs assert the post-crash discovery of fatigue cracks in four other UH-1's in the Flat Iron fleet is evidence of inferior maintenance by DynCorp. It is undisputed, however, that those cracks were found only by x-ray and were not visible to the naked eye. (DX II X.) Plaintiffs rely on the inadmissible testimony of Powell and Sammons to support their assertion that the cracks were visible to the naked eye. (Pl.'s Brief at 16-17.) Plaintiffs have proffered no evidence from which a reasonable juror could infer that DynCorp did not conform to the Army's inspection and maintenance procedures.

c. Compliance with the Warning Requirement

The third precondition to the government contractor defense requires the contractor to warn the United States about the dangers in the use of the equipment that were known to the contractor but not to the United States. *Boyle*, 487 U.S. at 512. In *Kerstetter v. Pacific Scientific Company*, a Fifth Circuit panel held that “[t]he government contractor defense does not require a contractor to warn the government of defects about which it only should have known. ‘After *Boyle*, a government contractor is only responsible for warning the government of dangers about which it has actual knowledge.’” 210 F.3d 431, 436 (5th Cir. 2000)(quoting *Trevino v. General Dynamics Corp.*, 865 F.2d 1474, 1487 (5th Cir. 1989)).

The Army has a Contracting Officer at Fort Rucker, Alabama, whose job is to ensure DynCorp's proper performance of its responsibilities under its contract with the Army. (DX G ¶ 4.) The Contracting Officer's representative is the Chief of the Aviation Logistics Management Division (“ALMD”), whose office is in the same building as DynCorp's offices. (*Id.*) There is an Army Officer in Charge at each Fort Rucker base field who reports to the Chief of ALMD.

Id. ¶ 5.) These Army personnel review DynCorp's inspection and maintenance procedures on a daily basis. (*Id.*)

There is communication between the Army and DynCorp on a daily basis. (*Id.* ¶ 7.) DynCorp informs the Army of all matters of which it is aware involving aircraft inspection and maintenance. (*Id.*) All paperwork generated by DynCorp regarding Army aircraft is shared with the Army, and is, in fact, the Army's property. (*Id.*)

Plaintiffs argue that DynCorp failed to warn the Army of problems with cracks in the vertical fin of Ft. Rucker UH-1's. (Pl.'s Brief at 18-19.) It is undisputed that DynCorp's inspections complied with the inspection procedures set forth in the Army's technical manuals. Indeed, it is undisputed that no crack in a vertical fin spar was ever discovered at the unit or intermediate maintenance levels prior to the Army changing its inspection criteria following the subject crash. (DX H ¶¶ 5, 6.) Therefore, because plaintiffs proffer no evidence from which a reasonable jury could infer that DynCorp knew about any dangers involving the use of the accident helicopter or any other Army aircraft, plaintiffs claims that DynCorp should have warned the Army of these dangers is without merit.

DynCorp has demonstrated compliance with each of the three requirements of the *Boyle* test. Because plaintiffs have failed to offer any evidence from which a reasonable jury could infer that DynCorp had not complied with each requirement of the *Boyle* test, DynCorp is entitled to judgment as a matter of law on each of plaintiffs' claims.

IV. Conclusion

For the foregoing reasons, the court is of the opinion that defendant DynCorp, Inc., is entitled to judgment as a matter of law. An order granting defendant's Motion for Summary Judgment on all of plaintiffs' claims will be entered contemporaneously with this Memorandum Opinion.

DONE this 29th day of March, 2002.

Sharon Lovelace Blackburn

SHARON LOVELACE BLACKBURN

United States District Judge